



The ILLINOIS ENGINEER

ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS
INCORPORATED

Affiliated with the National Society of Professional Engineers
631 East Green Street Champaign, Illinois



VOLUME XXIX, NO. 6

SUMMER ISSUE

JUNE, 1953

THE ILLINOIS ENGINEER—THIS MONTH

Summer Issues

The following paragraph quoted from the June, 1951, issue of the ILLINOIS ENGINEER and explaining society policy with regard to the magazine during the four months beginning with June are just as pertinent now as when they were first written.

"As has been customary for the past several years, during the four months of June, July, August and September, the ILLINOIS ENGINEER will be published as a "self cover" magazine. The reason for this has been the need to keep the total annual cost of the magazine within the amount allotted to it in the Society's budget. . . ."

The pages of the magazine during these four months will be devoted primarily to current news of the profession in and out of the Society. W. A. OLIVER, Editor

ACTION ON UNETHICAL PRACTICES

Ethics and Practice Committee

Preliminary review of nine (9) cases presented to the Society's Ethics and Practice Committee was made May 23, 1953 at Champaign. This action was taken in preparation for charges to be filed for violation of ethics or violations of statutory provisions of the Engineering Acts in Illinois. The committee urges that members present cases of local violations to the Society. The suggestion was made that suitable screening, by local committees and chapters, be completed to avoid unfair state attention to questionable cases.

Two cases are currently under investigation by the Department of Registration and Education and the balance are being processed for substantiating information. Certain violations will require the filing of charges with local state's attorneys for prosecution.

Members serving on the Ethics and Practice Committee are: L. K. Crawford, chairman, Capital Chapter; J. R. Gardner, Central Illinois Chapter; C. A. Koerner, Chicago Chapter; William T. Hooper, Jr., Lake County Chapter; R. T. Cash, DuKane Chapter; L. D. Hudson, Capital Chapter.

COST OF LIVING INDEX

The correction factor to be applied to the I. S. P. E. Schedule of Minimum Fees and Salaries was 188.3 for April, 1953. The factor is based upon the U. S. Department of Labor's most recent Consumer Price Index.

PRESIDENT'S MESSAGE

GRATIFYING!! That is the comment on the results already achieved by the various committees in the short two-and-one-half-month period.

The Membership Committee, headed by Earl W. Markwardt and K. C. Hoeglund, well supported by the respective chapter committeemen and individual members, is "ringing the bell." More power to you! To those of you who are thinking of signing that prospective member—Let's Act!

At this time, we are well ahead of last year. That means we have overcome the fifty "drops" that were reported at the convention. In my April message, I mentioned "it was not a dream to meet a goal of 3,000!" All we need is more and more "ACTION."

We have established numerous committees of which five should, through contacts incidental to their committee work, be able to provide us with new members. In fact, we are counting on them to bring in groups of new members. Those five committees are: Professional Education, Inter-Society Relations, State Engineering Employees, Membership, and Co-operation with Illinois Architects. Those committees have devices and can fortify their position in reaching new members. With planned approaches, we cannot miss.

The Ethics and Practices Committee, headed by L. K. Crawford, met at Champaign on May 23rd to discuss several matters pertaining to their committee work. They are doing a commendable job.

From the reports received from Robert M. Roy, head of the Public Relations and Publicity Committee, action is being taken and ideas are being formulated for an aggressive campaign. You will hear a lot from them in the future. Our State office headquarters will dispatch the news to the Publicity Committee. Send in the items of professional interest!

On April 28th, I was guest at a Junior-Engineers' dinner meeting of the Joliet Chapter. The meeting was well conducted by W. S. Chaney, president of the local chapter. Seventeen members of Joliet Junior College Engineers' Club, with their faculty sponsor, Mr. Drew W. Castle, attended. It was certainly heart-warming to

SUBSCRIPTION RATES

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find so much interest shown by the students and members in the workings of our National and State Societies. No chapter should miss a Junior-honor-night in their program.

On May 16th, I journeyed to Chicago for a meeting with Alois W. Graf and his committee on Registration Laws. Officers and the chairman of the Legislative Committee of the Illinois Engineering Council were also in attendance.

Matters of pending legislation and the position of Illinois Society of Professional Engineers with respect to the Council and the Architects Association of Illinois were discussed. It can be assured that the position of the profession is well protected. A preliminary to "Unity of Profession" is in process through such meetings.

Among other things discussed, Mr. Graf brought to attention certain items that should bear consideration in amending statutes to strengthen the position of the profession.

Let us all continue to exert ourselves to gain that "Unity of Profession." We are well on the way!!

RAYMOND G. BRICHLER, President, I.S.P.E.

VOX SECRETARII

P. E. ROBERTS, Executive Secretary

Legislative

A meeting of the Registration Laws Committee was held in Chicago on May 16th in Chairman Alois Graf's office. Also in attendance were Mr. J. F. Sullivan and Mr. J. A. Harrington of Illinois Engineering Council. Bills presently before the 68th General Assembly were discussed and plans for continued action were mapped.

H. B. 451 which defines and specifies the qualifications of an Engineer-in-Training has passed the House and is on first reading in the Senate. Since all of the necessary corrections to the Act are included in H. B. 451, H. B. 292 will either be pigeonholed or vetoed if passed.

H. B. 490, the new Architects Bill, will be called up for second reading the week of June 1st. Amendments exempting the Structural and Professional Engineers from the provisions of the new act will be introduced on second reading.

S. B. 204 which creates a commission to study air pollution in Illinois has successfully cleared the Appropriations Committee and is on second reading. The Illinois Society is particularly interested in this Bill because the Chief Sanitary Engineer of the Department of Health (Vice-President Klassen) is named an ex-officio member of the commission.

S. B. 427 is the new plumbers bill to replace the Act which was found unconstitutional by the Supreme Court. The Bill exempts the Architects, Structural and Professional Engineers from the purposes of the Bill.

S. B. 447 proposes to amend numerous sections of the present Architectural Act. The Bill is in the Committee on Efficiency and Economy on May 12th.

The Registration Laws Committee is making an interim report to the Board of Direction at its June 13th

meeting. The report will make suggestions that certain other laws be studied with the thought that those concerning engineers can be strengthened. This is a long-range study in preparation for the work of the 1954 and 1955 legislative committees.

N. S. P. E. Annual Meeting

Illinois and National Past President Alex Van Praag is making one of the principal addresses at the Daytona meeting of N. S. P. E. on June 18th. Others from Illinois who will attend the Florida meeting are National Directors George L. DeMent and Lee I. Osborn, President Raymond G. Brichler and Champaign County President C. Dale Greffe.

Miscellany

Secretary Emeritus and Mrs. Babbitt are off on a two months' tour of the Pacific Northwest and Alaska. Professor Babbitt has earned the title, Cosmopolite. . . . Summer school on the campus of the University of Illinois begins on June 22nd and ends on August 15th.

MEMBERSHIP DIRECTORY

PLEASE NOTE: Information blanks will be mailed to all those belonging to the Illinois Society between June 15th and July 1st. The information YOU put on the blank will appear in the Membership Directory to be published early in the fall. Please cooperate by returning the filled-out blank in the envelope provided by return mail. If you lay the blank aside, you may forget to fill it out and return it.

STOP—READ! HAVE YOU PAID YOUR DUES?

In spite of the lower value of the dollar and the third successive increase in printing costs your magazine the ILLINOIS ENGINEER has been held at high level quality.

Your annual dues have not been increased.

For these reasons, your prompt dues payment is of increasing importance. The June issue is the last which can be mailed to those who have not yet paid their 1953 dues. If you have forgotten, will you please mail your check to the Executive Secretary's office, 631 East Green Street, Champaign, today.

I hold every man a debtor to his profession;
from the which as men of course do seek to receive
countenance and profit, so ought they of duty
to endeavor themselves by way of amends
to be a help and ornament thereunto.

Sir Francis Bacon

BIGGEST RUBBER CONSUMER

About 85 per cent of the new rubber consumed in the United States goes into motor vehicles, according to a major rubber producer.

Tires and tubes alone took 75 per cent of the 1,214,000 long tons of new rubber used last year.

Automobile Facts

Shortage of Engineers ? ?

The following letter and brief article express two points of view concerning the present activities to encourage young men to enter the engineering profession. What are your ideas? We would be glad to present them to the Society in the pages of the ILLINOIS ENGINEER.

NO SHORTAGE

National Society of Professional Engineers,
1121 Fifteenth Street, N. W.,
Washington 5, D. C.

Gentlemen:

For some time there has been considerable discussion regarding what appears to be a change in N. S. P. E. policy without benefit of formal announcement. Apparently some members of the I. S. P. E. are willing to go along with it, but are reluctant to talk about it. At the annual meeting in Rock Island, attempts were made to get an answer. During one session of the Board of Direction, the subject was changed abruptly. Individually contacted, some representatives frankly did not know the answer, and others were evasive. Therefore, I am addressing this letter to the office where the inconsistency originated.

Published objectives indicate that the N. S. P. E. is interested in improving the professional, social, and economic status of the Professional Engineer. However, it appears that an entirely different objective has suddenly become more important. How did this happen, and why were the members not notified?

Engineers' Week was used as an opportunity to disseminate a flood of propaganda regarding an *alleged shortage of engineers*, and to present a distorted picture of the engineering profession to high school students in an effort to interest them in an engineering career. The best that can be said for this literature is that it was not an objective presentation of the facts, and therefore did not reflect credit upon an engineering society.

However, the quality of the publicity is secondary to the fact that a recruiting campaign is in progress. Everyone of normal intelligence above grammar school knows that abundance never increased the value of anything. Employed non-union engineers know that the only thing which can contribute to their welfare is a favorable supply-demand ratio. No amount of wishful dreaming will change this. Nevertheless, their own society has suddenly become interested in reversing a favorable trend.

The Society is now in the position of endorsing one objective while actively working to defeat it. This does not inspire confidence, and probably is at least partly responsible for declining membership. I know several prospective members who have been adversely affected. How many more there might be is a subject for consideration during rational moments.

While discussing this matter, another member suggested that a policy committee be formed to prevent such things. This should not be necessary. The N. S. P. E.

by-laws provide for an Ethical Practices Committee which might interest itself in Society affairs, in addition to the activities of others.

If this questionable situation can be explained, I am sure that many other members will be interested also.

Very truly yours, H. MILLARD, P.E.,
Member, N.S.P.E.

DECLINING CROP OF NEW ENGINEERS WORRIES EDUCATORS, INDUSTRY

What's to be done about the critical gap between American industry's increasing demand for engineers and the declining supply of graduates from engineering schools?

This was the problem considered recently by more than 300 educators and industry representatives meeting at Northwestern's Technological Institute for the school's fifth annual College-Industry Conference.

Clarence E. Deakins, dean of students, Illinois Institute of Technology, pointed out that industry and the schools are presented with these key facts: Each year the nation needs for replacement alone, an estimated 30,000 new engineers. But in June, 1953, colleges are expected to graduate but 24,000 with this number declining to 19,000 in 1954 and to 17,000 in 1955.

Discussing the problems involved in recruiting talented young persons for the engineering profession, Deakins said that "industry itself is in direct competition with colleges for the high school graduate."

"The high school graduates with mechanical skills and interests," Deakins continued, "are the very boys who are attracted to the high-paying jobs in industry. Parents who find it difficult to finance their sons' education encourage them to take advantage of these attractive jobs."

Because of the already serious shortage of engineers, Deakins said, industry and the colleges "must impress upon our selective service officials the great tragedy that will befall our future national security and welfare if they strip the engineering schools of a large proportion of their student body."

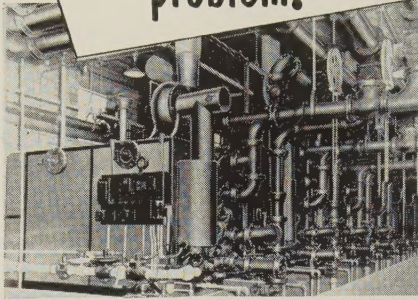
As two parts of a suggested six-point program to increase the number of engineering students, Deakins urged that there be earlier identification of engineering aptitudes and interests among secondary school students, and that industry increase its scholarship funds for talented students now lost to industry because they cannot afford an engineering education.

This latter suggestion was seconded by Prof. Kurt F. Wendt, University of Wisconsin, who said industry could encourage able but financially embarrassed youths to en-

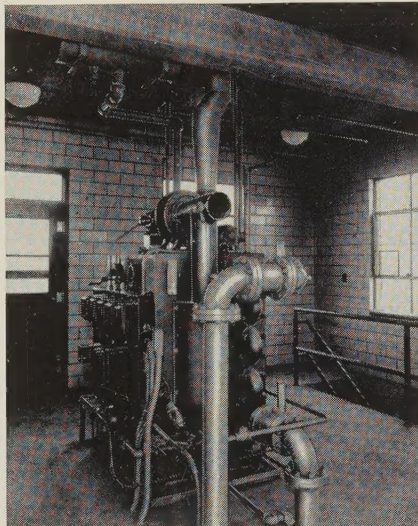
Have You Obtained a New Member for the Society?

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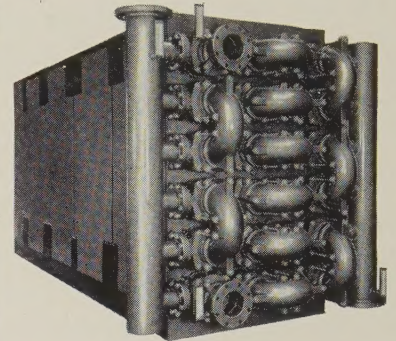
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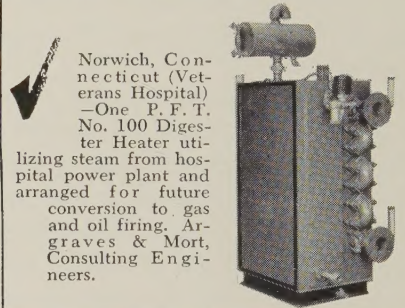
✓ Akron, Ohio, Sewage Treatment Plant—Eight P.F.T. No. 1000 Digester Heaters and Heat Exchangers serving six digesters. 8,000,000 B.t.u./hr. combined output. Four are sludge gas fired — four gas and oil fired. Havens & Emerson, Consulting Engineers.



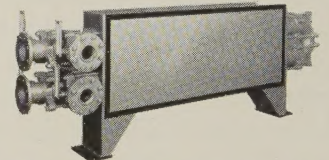
✓ Northern Indiana State Hospital, Westville, Indiana—One P.F.T. No. 100 Heater and Heat Exchanger for sewage gas and oil firing. Boyd & Phelps, Consulting Engineers.



✓ Hunt's Point Plant, New York City—One of four P.F.T. No. 634 Heat Exchanger units, having combined transfer rating of 14,500,000 B.t.u./hr. output. Waste heat from sewage sludge gas engines is utilized. Engineered by New York City Department of Public Works, and Greeley & Hansen, Consulting Engineers.



✓ Norwich, Connecticut (Veterans Hospital)—One P.F.T. No. 100 Digester Heater utilizing steam from hospital power plant and arranged for future conversion to gas and oil firing. Argaves & Mort, Consulting Engineers.



✓ Hart Island Sewage Treatment Plant, New York City—P.F.T. Special 2 pipe Heat Exchanger using existing boiler as a source of heat. Rated to transfer 140,000 B.t.u./hr. Sludge from digester is circulated through heat exchanger. Engineered by New York City Department of Public Works.



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ter the engineering field through a freshman scholarship program.

"Scholarships are being made available principally to junior and senior students," he said, "but the opportunities for entering freshmen are quite limited."

Wendt added that industry also could help students to earn their way by increasing the number of openings wherever possible for part-time and summer employment.

"Perhaps the best present answer to the most difficult and pressing of the problems," Wendt concluded, "lies in a substantial expansion of the technical institute field. If we can encourage more young men to prepare themselves in a period of two years, for positions in industry which do not require nearly the amount of training ex-

pected of engineering students, we can increase our technical forces and use our supply of engineers more effectively."

This same proposal was made also by Titus G. LeClair, manager of engineering, Commonwealth Edison Co., during his discussion of what employers can do to overcome the engineer shortage.

Speaking on how secondary schools recognize and encourage scientifically-gifted students, Lester J. Schloerb, assistant to the general superintendent, Chicago Board of Education, said that in Chicago high schools "talent is developed through acceleration, an enriched curriculum, a wide choice of elective subjects, and occasionally by placing the student in a special group gifted in the field of science."

—Sci-en-tech News.

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RECONSIDERATION OF N.S.P.E. DUES INCREASE

The proposal for an increase in NSPE dues from \$7.00 to \$10.00, and corresponding increases for EIT's and MAL's, which had been discussed at the Tulsa Annual Meeting and action deferred until the Richmond meeting, was thoroughly debated on both sides. Principal argument for the increase was that inflation and an expanded program required additional financing and without such an increase the NSPE Public Relations program and other essential activities would have to be curtailed. The major opposition argument was that the members are not convinced of the necessity for such increases, that an increase would cause loss of membership

and that additional financing can be obtained by an increased membership. A motion for the dues increase was rejected on a roll call vote, 41 to 35, but with 21 State Societies approving and 14 opposing.

A later motion was adopted to reconsider the previous action and present the question again at the Annual Meeting in Daytona Beach, Fla., next June. In the interim the State Societies are to be furnished a clear and concise statement of the reasons the increase is needed, in the name of the Board of Directors, and with a request that the State Societies poll their membership on the question. *President Coleman* appointed *National Director Alfred J. Ryan* of Colorado as chairman of a special committee to prepare the statement for the State Societies.

Engineering Societies Personnel Service, Inc.

New York Chicago Detroit San Francisco
84 East Randolph Street, Chicago 1, Ill. STate 2-2748

These items are from information furnished by the Engineering Societies Personnel Service, Inc., Chicago. This SERVICE is operated on a co-operative non-profit basis by the Illinois Society of Professional Engineers, and the national societies of Civil, Electrical, Mechanical and Mining and Metallurgical Engineers. Apply to ESPS, Chicago and the key number indicated. Prepared ENGINEERS AVAILABLE advertisements limited to 40 words, with typed resumé attached may be submitted to ESPS, Chicago by members of the Illinois Society of Professional Engineers at no charge.

If placed in a position as a result of an Engineers Available or Position Available advertisement, applicants agree to pay the established placement fee. These rates are available on request and are sufficient to maintain an effective non-profit personnel service. A weekly bulletin of positions open is available to subscribers. Apply E.S.P.S., Chicago.

OVER THE MANAGER'S DESK

As June comes upon us, we automatically think of "June Brides," and of course the forgotten bridegroom who is rather necessary for the bride, and of June graduates. In both cases, it means starting a new career with a great deal of hope and optimism and even enthusiasm.

Can you look upon the career of your engineering department, or upon your own career for that matter, with hope, optimism, and enthusiasm? Are you satisfied that the accomplishments obtained have been made in a 'Magna Cum Laude' manner? If not, get in touch with us at E.S.P.S. and see if we can help you.

B.H.A.

MEN AVAILABLE

Chief Engr. 45. Two yrs. costs and design of maintenance for feed and fertilizer mfr. Twelve yrs. supervising engrg. dept. of soap and edible products. Fifteen mos. supervising design and checking of detail drawings for tank fabricators. \$9600. Midwest. 627-PE

Sales Engr. C.E. 27. Two yrs. nine mos. develop distribution and promote sales of building materials. \$450. Chicago. 628-PE

Salesman. 31. Two yrs. handle all quotations, customers' problems, inside and outside calls on non-ferrous castings. Two yrs. outside sales of food products. Four yrs. layout and detail conveyors and detail of sewers. \$5200. Midwest. 629-PE

Designer. 57. Twelve yrs. draftsman doing municipal, engineering, map, public utilities, drafting and computing. \$4000. Midwest. 630-PE

Asst. Factory Mgr. M.E. 25. Two yrs. charge of inspection and production engineering controls. Mfr. One yr. mech. engr. design on constr. hoists and semi-automatic production chucks. \$4700. Midwest. 631-PE

Consultant. C.E. 57. Twenty-one mos. compile data and write reports on mine, rail development and utilities. Twelve yrs. charge of design, estimate, purchase, construction of buildings. \$7200. Midwest. 632-PE

Sales Engr. M.E. 32. Five yrs. supervise maintenance, constr., and installation of new chemical equip. Seven mos. sales and combustion engrg. in connection with heating and ventilating contractors. \$7200. United States. 633-PE

Supt. Constr. 61. Eighteen yrs. checking, engineering construction, estimates, trouble shooting. Two yrs. design of mech. and elect. remodeling. \$7500. Chicago. 634-PE

Field Engr. 32. Five yrs. maintenance work and remodeling. Two yrs. installed and supervised installation of all types of conveyors. \$5000. United States. 635-PE

Draftsman. 30. Four yrs. training program of electrical underground coal mining mach. Two yrs. assisted plant engr. Two yrs. layout, development, detail, design and some estimating on heavy equipment. \$4800. Chicago. 636-PE

Field Engr. C.E. 28. Two yrs. Jr. Vice-Pres. making periodic inspections of properties company in making loans on. Submitting loans to investors. \$6000. Chicago. 637-PE

Designer. C.E. 31. Five yrs. structural engr. doing design, check, and draw all concrete and steel structures, sewerage, utility relocation and small building design. Salary: \$6500. Chicago. 638-PE

POSITIONS AVAILABLE

Sanitary and Structural Engr. B.S. in Eng. Age: 35-50. At least 10 yrs. exp. sewer systems, sewerage treatment, water supply, treatment, distribution, personnel supervisory exp. Must be licensed struct. engr. in State of Ill. Actual duties: be in complete charge of sanitary dept. Salary: \$10,000-\$15,000. Loc.: Illinois. T-9757

Recent Graduate. Chem. M.E. Pet. Geo. Physicist, Mining. Recent graduates or better. Single men. Age: 22-30. Duties: work on mud logging units in the oil fields. Moving expenses paid. Training spots leading to petroleum engineering. For an oil well testing company. Salary: \$365 per month. Location: Texas. T-9939

Sales. Age: up to 50. 2 plus yrs. exp. in sales of constr. materials or material handling accessories. Know: structural steel, electrical structures or mechanical structures. Duties: selling or contacting arch., engrg., contractors, or industrials for line of metal framing. For mfr. of metal frames. Sal.: \$400-\$600/mo. Loc.: Several open. Employer will negotiate fee. Car req'd. R-9835

Power Plant Supt. M.E. or E.E. Age: 40 and up. 5 yrs. plus exp. in supervision capacity in power plant. Knowledge of modern boilers, turbines and aux. equip. Duties: supervise operations and maintenance in

10,000 kw steam turbo electric plant. For a public utility. Salary: up to \$7200 per yr. Employer will negotiate fee. Loc.: Illinois. T-9413

Chemist. B.S. to Ph.D. Men who have had graduate work in field of resins, paints, lacquers, cellulose, starch and related high polymers. Work exp. in these fields particularly desirable. Up to \$800 per month. Location: Michigan. T-9926

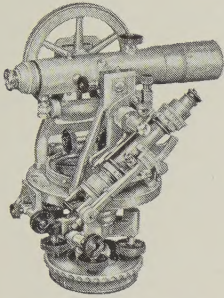
Project Engineer. M.E. Age: up to 45. 3 plus yrs. exp. in project work fast moving machinery such as packaging or paper folding equipment. Knowledge of printing helpful. Duties: Project work in maintenance, design and installation of very fast moving, light automatic machinery. For a manufacturer. Sal.: up to \$170 per week. Employer will negotiate fee. Location: Chicago. R-9925

Sales. M.E., Chem. Eng. or Pet. Eng. Age: up to 32. 2 yrs. plus experience in sales work either industrials or automotive fields. Duties: sell petroleum products to large trucking companies and fleet owners. Salary: \$440 to \$450 per mo. Car furnished. Location: Chicago. R-9923

Metallurgist. Met. or Met. Eng. Recent grad. or better. Duties: ferrous and non-ferrous controls, process development and handling field complaints on tractors and Diesel engines. For a manufacturer. Salary: up to \$385 per mo. depending on exp. Employer will negotiate fee. Location: Western Chicago suburb. R-9922

Industrial Chemical Sales. B.S. in Chem. Eng. or B.S. in Chem. Heavy on Organic. 3 yrs. sales of industrial or fine chemicals or 6 yrs. production work in industrial or fine chemicals with chemical research. Sales aptitude or 4 years exp. with sales aptitude. Sale of industrial and fine organic chemicals, also new product information seeking in chemical lines. To start (after training) in Jersey-Manhattan area. Salary: \$450-\$550 start. Loc.: East preferably. T-9921

Metallurgist—Junior. Degree in Chem. Age: open. Min. Exp. Open. Routine analytical procedures on ferrous and non-ferrous metals. Knowledge of qualitative and quantitative. Duties: conduct analyses on most ferrous and non-ferrous type metals as control factor on incoming inspection of raw materials. Some misel. lab. work associated with metallurgy. For a manufacturer of photographic supplies. Salary: Approx. \$375 per month. Employer will negotiate fee. Location: Chicago. R-9920(b)

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Some political situations that often seem unexplain-
able are solved in the light of the following episode:

Two farmers had been at "outs" for twenty years.
One of them drove over to the line fence one day, where
he accosted his old enemy neighbor with a husky,
"Mawnin', Jeff."

"What you speakin' to me fer, after these twenty
years?" asked the surprised and suspicious enemy.

"I'm jest here t' tell you that I'm runnin' for the
legislater, an' I don't want you ner none of yourn a
votin' fer me."

"Now lookee here," demanded neighbor Jeff, "me an'
my kin's been votin' this ticket since grandpappy came
to these hills, an' if you don't want us a votin' fer you,
you jest git off th' ticket!"

A loyal Irishman was seeing his son off on the steamer
to a new land to seek his fortune.

"Now Michael, me boy," he said, as they parted, "re-
member the three bones, and ye'll get along all right."

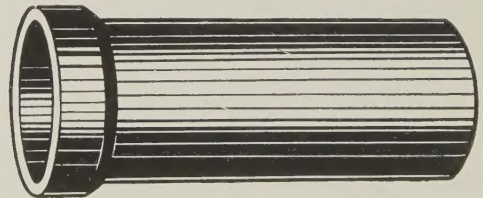
A bystander near by overheard the remark, and when
the ship had gone, he asked the old gentleman what three
bones he referred to.

"Sure, now," said the man of Erin, "and wouldn't
it be the wishbone and the jawbone and the backbone?
It's the wishbone that keeps you going after things, and
it's the jawbone that helps you find out how to go after
them if you are not too proud to ask a question when
there's something you don't know, and it's the backbone
keeps you at it till you get there."

**ORNAMENTAL
METALWORKS COMPANY****Ornamental Metal****Miscellaneous Iron & Structural Steel****Cast Iron Frames & Covers****Manhole Steps****Pipe Railing****Flag Poles****Weir Plates****Bronze Bolts****Grating & Frames****Stop Plates & Grooves****Steel Doors & Windows****Stainless Steel, Bronze & Aluminum**

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**ACIDS DON'T AFFECT
SALT GLAZED VITRIFIED CLAY
SEWER PIPE**

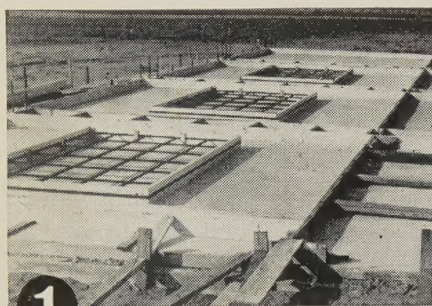
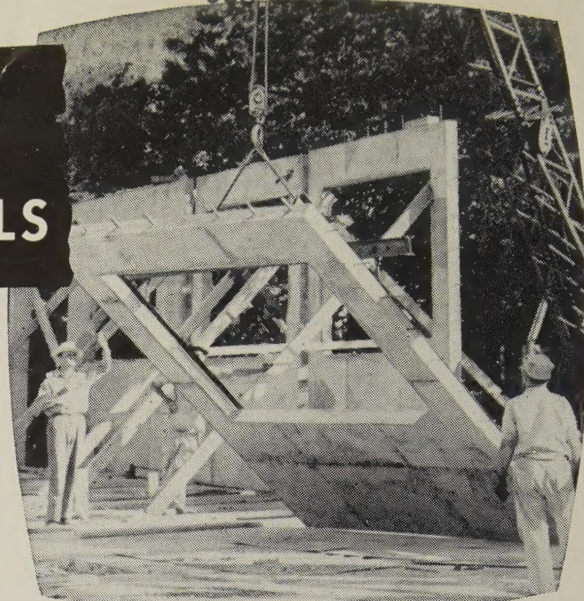
Only one sewerage and drainage material is
completely safe from chemical attack—particu-
larly in industrial areas, where factories dis-
charge heavy concentrations of acids and alka-
lies: Streator Salt Glazed Vitrified Clay Sewer
Pipe.

Truck deliveries on Salt Glazed Vitrified
Sewer Pipe and Salt Glazed and Shale Drain
Tile can be made on Short Notice.

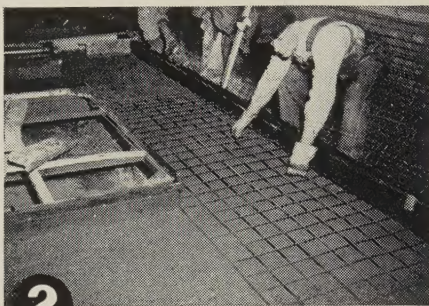
STREATOR DRAIN TILE CO.**Streator, Illinois**

How to build economical CONCRETE TILT-UP WALLS

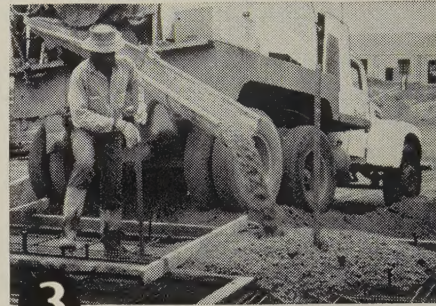
Tilt-up construction is a tested and proven method of building with reinforced concrete. It saves time, money and materials in erecting standard or individually designed buildings of one story or more. Tilt-up construction is easy and simple and eliminates most form-building and form-handling problems. Tilt-up structures are firesafe, decayproof, good looking, long lasting, easy to maintain. Here's how to build by the economical tilt-up method:



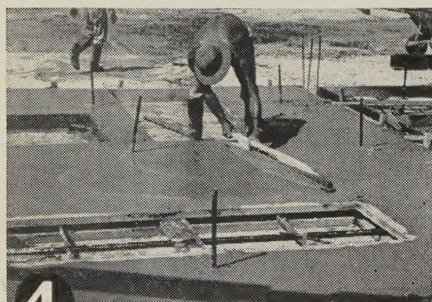
1 After concrete floor is constructed, position edge-forms and frames or forms for openings. Apply bond-preventative to floor.



2 Place the required amount of reinforcing in the panel and be sure to provide suitable means to hold it in the proper position.



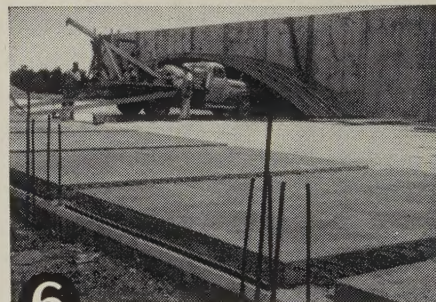
3 Place concrete, using quality mix yielding durable walls. Use care to prevent honeycombing, especially along bottom edge.



4 When concrete has partially hardened, trowel, float or brush the surface to obtain the kind of smooth or textured finish desired.



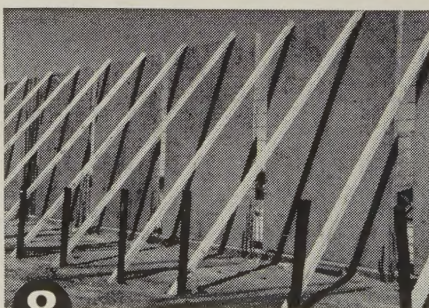
5 Incorporate decorative designs before the concrete hardens. The illustration above shows workman adding a low-relief design.



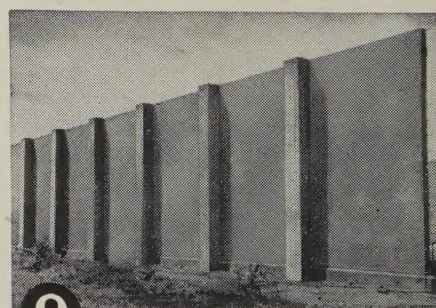
6 Cure the panels until concrete has attained the desired strength. Then carefully remove all the edge and opening forms.



7 With crane or hoist tilt the panels into position in wall. Grout joint between the wall and the floor to make it weathertight.



8 Temporarily brace wall panels as shown before adding reinforcing and forms for the columns that will tie the wall together.



9 Place the concrete in the column forms and allow it to cure properly. Then remove the forms and braces. Wall is now completed.

Write for free, 32-page bulletin entitled "Tilt-Up Construction." Distributed only in the U.S. and Canada. Address Dept. 9-57.

PORTLAND CEMENT ASSOCIATION
111 W. Washington St. (A national organization to improve and extend the uses of portland cement
Chicago 2, Illinois) and concrete through scientific research and engineering field work